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	From the INTERNATIONAL BUREAU
PCT	То:
NOTIFICATION OF THE RECORDING OF A CHANGE (PCT Rule 92bis.1 and Administrative Instructions, Section 422) Date of mailing (day/month/year) 23 March 2000 (23.03.00)	EHRNER & DELMAR PATENTBYRA AB P.O. Box 10316 S-100 55 Stockholm SUÈDE
Applicant's or agent's file reference 23454-PC	IMPORTANT NOTIFICATION
International application No. PCT/SE99/00260	International filing date (day/month/year) 24 February 1999 (24.02.99)
1. The following indications appeared on record concerning: the applicant the inventor	the agent the common representative
Name and Address AXEL EHRNERS PATENTBYRÅ AB P.O. Box 10316 S-100 55 Stockholm Sweden	State of Nationality Telephone No. 46 8 459 18 00 Facsimile No. 46 8 661 88 62 Teleprinter No.
The International Bureau hereby notifies the applicant that the the person The name the additional bureau hereby notifies the applicant that the the second the person The International Bureau hereby notifies the applicant that the second the person The International Bureau hereby notifies the applicant that the second the person The International Bureau hereby notifies the applicant that the second the person The International Bureau hereby notifies the applicant that the second the person The International Bureau hereby notifies the applicant that the second the person The International Bureau hereby notifies the applicant that the second the	
Name and Address EHRNER & DELMAR PATENTBYRA AB P.O. Box 10316 S-100 55 Stockholm Sweden	State of Nationality State of Residence Telephone No. 46 8 528 025 00
Sweden	Facsimile No. 46 8 528 025 90 Teleprinter No.
3. Further observations, if necessary:	
4. A copy of this notification has been sent to: X the receiving Office the International Searching Authority X the International Preliminary Examining Authority	the designated Offices concerned X the elected Offices concerned other:
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer : P. Regis

Telephone No.: (41-22) 338.83.38

Facsimile No.: (41-22) 740.14.35

PA NT COOPERATION TREAT

	From the INTERNATIONAL BUREAU
PCT	То:
NOTIFICATION OF ELECTION (PCT Rule 61.2)	Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ETATS-UNIS D'AMERIQUE
Date of mailing: 27 April 2000 (27.04.00)	in its capacity as elected Office
International application No.: PCT/SE99/00260	Applicant's or agent's file reference: 23454-PC
International filing date: 24 February 1999 (24.02.99)	Priority date: 21 October 1998 (21.10.98)
Applicant: KÄRSTEN, Toivo et al	
1. The designated Office is hereby notified of its election made X	r Examining Authority on: 99 (29.10.99) national Bureau on:
The International Rureau of WIPO	Authorized officer:

Form PCT/IB/331 (July 1992)

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34, chemin des Colombettes 1211 Geneva 20, Switzerland

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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9803600-7

24 February 1999 (24.02.99)

21 October 1998 (21.10.98)

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With international search report.

(81) Designated States: JP, US, European patent (AT, BE, CH, CY,

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,

(71) Applicant (for all designated States except US): SOMITRACK

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(72) Inventors; and

(30) Priority Data:

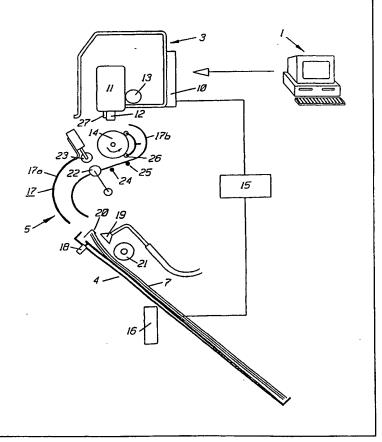
(75) Inventors'Applicants (for US only): KÄRSTEN, Toivo [SE/SE]; Bridgevägen 9A, S-142 66 Trångsund (SE). REHAL, Jagdev [SE/SE]; Ferievägen 25, S-177 60 Järfälla (SE).

(74) Agent: EHRNER & DELMAR PATENTBYRA AB; P.O. Box 10316, S-100 55 Stockholm (SE).

(54) Title: METHOD AND APPARATUS FOR VERIFICATION OF IMPOSITIONS FOR PRINTING PLATES

(57) Abstract

A method and an apparatus for performing a double sided imposition verification on sheets (7) of paper or another material of impositions (9) prepared by means of digital data (1, 2) and comprising several print pages consisting of text and/or images, and comprising a printing unit (3) in the form of a plotter/printer having a paper magazine (4) and means (5) for feeding one sheet (7) of paper at the time into the printing unit (3), means (17) for guiding said sheet (7) of paper into the printing unit (3) and for turning said sheet (7) of paper for making it possible to print said sheet of paper on both sides thereof, means (24) for observing the existence of sheets (7) of paper in the feeder unit, and means (25) for observing the front/rear edge of a sheet of paper, feeder and stop means (22, 23, 26 <-> 14) for the sheet of paper, and means for turning the direction of rotation of the feeding-in and feeding-out means (22, 23) for sheets (7) of paper into and out from, respectively, said printing roll (14).



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International application No.

PCT/SE 99/00260

A. CLASSIFICATION OF SUBJECT MATTER IPC6: B41F 33/00, B41J 13/00, B65H 15/00 According to International Patent Classification (IPC) or to both national classification and IPC FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC6: B41F, B65H Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched SE,DK,FI,NO classes as above Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPI, PAJ C. DOCUMENTS CONSIDERED TO BE RELEVANT Category* Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X 1 See the whole document (Messerschmidt, Niels. "Ny roll för storformatskriva ren". Aktuell Grafisk Information, Oktober 10/97, Nr. 284, sid 28-30. ISSN 0347-9846). X WO 9842509 A1 (BARCO GRAPHICS N.V.), 1 1 October 1998 (01.10.98), page 2, line 21 - line 27; page 3, line 13 - line 31; page 4, line 18 - line 27, claims 1,4,6, page 5, lines1-28; page 6, line s 11-26; page 10. lines 13-27; page 11, lines 8-14 Y 2-5,8 Further documents are listed in the continuation of Box C. See patent family annex. Special categories of cited documents: later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "A" document defining the general state of the art which is not considered to be of particular relevance "E" erlier document but published on or after the international filing date "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive document which may throw doubts on priority claim(s) or which is step when the document is taken alone cited to establish the publication date of another citation or other special reason (as specified) document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination document referring to an oral disclosure, use, exhibition or other means being obvious to a person skilled in the art document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 09 -08- 1999 <u>15 July 1999</u> Name and mailing address of the ISA/ Authorized officer Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Teija Kurki Facsimile No. +46 8 666 02 86 Telephone No. + 46 8 782 25 00

International application No. PCT/SE 99/00260

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Y	US 4623900 A (WATANABE), 18 November 1986 (18.11.86), column 5, line 34 - line 57, figures 8, 9	2
Y	GB 2168688 A (XEROX CORPORATION), 25 June 1986 (25.06.86), page 1, line 10 - line 15; page 1, line 51 - line 58; page 1, line 76 - line 115, page 2, lines 3-22	3-5,8
A		6,7
		1
Y	US 5415391 A (WONG ET AL), 16 May 1995 (16.05.95), column 2, line 30 - line 64, figures	3-5,8
A		6,7
A	US 5625766 A (KAUFFMAN), 29 April 1997 (29.04.97), see the whole document	1
A	EP 0105468 A2 (TOPPAN PRINTING CO., LTD.), 18 April 1984 (18.04.84), see the whole document	1
P,A	EP 0896939 A1 (SAMSUNG ELECTRONICS CO., LTD.), 17 February 1999 (17.02.99), figures 3A-3C, abstract	3-8
A	Patent Abstracts of Japan, abstract of JP 6-219651 A (RICOH CO LTD), 9 August 1994 (09.08.94), abstract, figures	2-8
A	Patent Abstracts of Japan, abstract of JP 60-191943 A (RICOH K.K.), 30 Sept 1985 (30.09.85), abstract, figures	3-8
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International application No.

PCT/SE 99/00260

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	Patent Abstracts of Japan, abstract of JP 8-310706 A (CANON INC), 26 November 1996 (26.11.96), abstract, figures	3-8
		
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This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons: Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely: Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet) This International Searching Authority found multiple inventions in this international application, as follows: See extra sheet As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
because they relate to subject matter not required to be searched by this Authority, namely: Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet) This International Searching Authority found multiple inventions in this international application, as follows: See extra sheet 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet) This International Searching Authority found multiple inventions in this international application, as follows: See extra sheet 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
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This International Searching Authority found multiple inventions in this international application, as follows: See extra sheet 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. 2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment
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2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
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3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on Protest The additional search fees were accompanied by the applicant's protest.

Form PCT/ISA/210 (continuation of first sheet (1)) (July1992)





The technical feature in common to claims 1-8 is a method for performing imposition verification on sheets, which are introduced through a feeding/turning unit to a printer. According to a digital information from a control unit of a printer, one side of the sheet is printed first and then the sheet is turned and the opposite side of the sheet is printed. A visual verification is made to determine that the impositions for the two print sides are located exactly. In case the exactness is lacking, corrections are made and a renewed verification printing is made.

The search has revealed two documents, a report from Niels Messerschmidt in Aktuell Grafisk Information 10/97 pages 28-30 and document WO 9842509 A1, which both show a similar method as claimed in the claim 1. The invention according to the claim 1 is therefore not novel and the technical feature mentioned above is thus not a special technical feature in the meaning of PCT rule 13.2. Claims 2-8 do thus not have any special technical feature in common and consequently constitutes 3 independent inventions.

Invention I: Claim 1, directed to a method for performing imposition verification on sheets.

Invention II: Claim 2, directed to a method of printing the sheet on a rotary printing roll, which rotates in a predetermined direction and which rotation is the same for both sides of the sheet.

Invention III: Claims 3-8 directed to a method and to an apparatus for feeding and turning the sheet.

Information on patent family members

International application No.

01/06/99

PCT/SE 99/00260

Patent do cited in sear		Publication date		Patent family member(s)		Publication date
WO 984	2509 A1	01/10/98	NON	E		
US 462	3900 A	18/11/86	DE JP	3442627 60110482		30/05/85 15/06/85
GB 216	8688 A	25/06/86	NON	E		
US 541	5391 A	16/05/95	JP	7323941	A	12/12/95
US 562	5766 A	29/04/97	NON	IE		
EP 010	5468 A2	18/04/84	DE JP JP JP	3377905 59214032 1602136 2027943 59062153	A C B	13/10/88 03/12/84 26/03/91 20/06/90 09/04/84
EP 089	6939 A1	17/02/99	CN JP	1208698 11058861		24/02/99 02/03/99

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WIPO			PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACT	HG BIN	ation of Transmittal of International	
23454-PC/OH		Preliminary	Examination Report (Form PCT/IPEA/416)	
International application No.	International filing date (e (day/month/year) Priority date (day/month/year)		
PCT/SE99/00260	24.02.1999		21.10.1998	
International Patent Classification (IPC) or	r national classification an	d IPC7		
B 41 F 33/00, B 41 J	13/00, в 65 н	15/00		
Applicant				
Somitrack AB et al				
 This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36. This REPORT consists of a total of sheets, including this cover sheet. This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). 				
These annexes consist of a total o	f 3 sheets.			
3. This report contains indications relating to the following items:				
I Basis of the report				
II Priority				
III Non-establishment o	f opinion with regard to no	velty, inventive step	and industrial applicability	
	_	,, ,,,,,,,,,		
IV Lack of unity of invention				
V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement				
VI Certain documents cited				
VII Certain defects in the international application				
VIII Certain observations on the international application				
Date of submission of the demand		Date of completion	of this report	
29.10.1999		19.01.2001		
Name and mailing address of the IPEA/SI	3	Authorized officer		
Patent- och registreringsverket Box 5055	Telex 17978			
S-102 42 STOCKHOLM	PATOREG-S	Teija Kurk		
Facsimile No. 08-667 72 88 Telephone No. 08-782 25 00				





I.	Basi	sis of the report	
1.	With	h regard to the elements of the international application:	
		the international application as originally filed	
	\boxtimes	the description:	
		pages 1-12 , as origina	
		pages, filed with the	demand
		pages, filed with the letter of	
	\bowtie	the claims:	
		pages, as origina	
		pages, as amended (together with any statement) under an	ticle 19
		pages 13-15 , filed with the	demand
	<u> </u>	pages, filed with the letter of	
	\bowtie	the drawings:	n. Glad
		pages 1-3 , as origina	
		pages, filed with the pages, filed with the letter of	demand
	\Box		
	Ш	the sequence listing part of the description: pages , as origina	lly filed
		pages, filed with the pages, filed with the letter of	demand
	These	h regard to the language, all the elements marked above were available or furnished to this Authority in the language international application was filed, unless otherwise indicated under this item.	n which hich is: 2 and/
4.		The amendments have resulted in the cancellation of: the description, pages the claims. Nes	
		the claims, Nos.	
٠		the drawings, sheet/fig	• .
5.		This report has been established as if (some of) the amendments had not been made, since they have been considered beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**	-
*	in thi	placement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are re this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 d 70.17).	ferred to
**	Any i	v replacement sheet containing such amendments must be referred to under item I and annexed to this report.	

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Internal application No.
PCT/SE99/00260

v.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
	citations and explanations supporting such statement

4	Statement
1.	

Novelty (N)	Claims Claims	1-7	YES NO
Inventive step (IS)	Claims Claims	1-7	YES NO
Industrial applicability (IA)	Claims Claims	1-7	YES NO

2. Citations and explanations (Rule 70.7)

The invention relates to a method and to an apparatus for performing a double sided imposition verification on sheets of paper or another material.

In the prior art it has been possible to check the correctness of impositions only from one side of the printing sheet. This causes problem, especially in the CTP (computer-to-plate) production, where the digital information is exposed directly to the printing plate without film handling processes, and when it is not possible to check that the impositions of both printing sides coincide with each other. Double sided printing is also well known in the prior art. However the invention according to the amended claims 1-7 presents a novel method and an apparatus for verification of impositions from both printing sides.

These documents were cited in the International Search Report:

D1: Messerschmidt, Niels. "Ny roll för storformatsskrivaren". Aktuell Grafisk Information, oktober 10/97, Nr. 284, pages 28-30. ISSN 0347-9846.

D2: WO 9842509 A1

D3: US 4623900 A1

D4: GB 2168688 A

D5: US 5415391 A1

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT



Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: V

Documents D1 and D2 show the closest prior art methods and apparatus for printing a double sided imposition verification of sheets. However they do not show a method or an apparatus described below, where the sheet of paper is fed with the front edge to a position against a stop edge and where the front edge is moved inwards by means of secondary feeder rolls. The sheet of paper becomes buckled and the front edge of the paper is straightened up. Thereafter the feeding of the paper is stopped and the front edge is pulled forwards and is kept secured by the printing roll and the counter press rolls of the printing unit. The rear feeder rolls are released so that the sheet is given a possibility to be rotated and straightened out, in case it has been positioned obliquely, and to enter an exactly correct position.

According to the arguments stated above, the invention according to the amended claims 1-7 is novel, involves an inventive step and has industrial applicability.

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CLAIMS

1. A method for performing an imposition verification on sheets (7) of paper or another material of impositions (9) prepared by means of digital data (1, 2) and comprising several print pages (8) consisting of text and/or images using a printing unit (3) in the form or a plotter/printer having a paper magazine (4) and means (5) feeding one sheet of paper (7) at the time into the printing unit (3), characterized

in that a test print sheet (7) is introduced through a feeding/turning unit (17) of the printing unit (3) and is printed on one side of the sheet (7) based on digital information (1, 2) which has been received in a control unit (10) of the printing unit (3),

in that the sheet (7) of paper is turned upside down after the first page has been printed and the sheet is printed on the opposite side thereof based on digital information (1, 2) which has been received in the control unit or said printing unit (3),

in that a visual or another verification is made to determine that the print pages (8) of the impositions for the two print sides are located exactly as determined and that the impositions of the front and rear sides of the print sheet exactly coincide with each other,

and in that, in case any lack of exactness is observed, corrections are made in the computer unit (1, 2) for preparing text and/or images, whereupon a renewed verification printing is made as mentioned above.

2. A method according to claim 1, characterized in that the verification printing is made with the sheet (7) of paper supported on a rotary printing roll (14), in that the printing of the first side (the front side) of the sheet (7) of paper is made with the printing roll (14) rotating in a predetermined direction (counter clockwise direction as seen in figure 3), whereupon the sheet (7) of paper is turned and the opposite side (the rear side) of the sheet (7) of paper is printed in that the printing roll (14) is rotated in the same direction as in the

said first direction with the sheet (7) of paper turned upside down so that said opposite side (the rear side) of the sheet (7) of paper is facing the printing unit (3).

3. A method according to claim 1 or 2, characterized

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in that the sheet (7) of paper is fed, with the front edge thereof, against a stop edge (26) at the printing unit (3),

in that the sheet (7) of paper, from a place spaced rearwardly from said front edge is moved inwards a further little distance by means of secondary feeder rolls (22, 23), whereby the sheet (7) of paper becomes buckled,

whereupon the feeding of the sheet (7) of paper is stopped, the printing roll (14) and counter press rolls (26) are rotated slowly so that the front edge of the sheet (7) is pulled forwards and is kept secured by the print roll (14) and the counter rolls (26) of the printing unit,

and the rear (secondary) feeder rolls (22, 23) are released so that the sheet (7) of paper is given the possibility, in case said sheet happened to be positioned obliquely, of being rotated to enter an exactly correct position.

4. A method according to claim 3, characterized

in that the turning of the sheet of paper is made in that said sheet of paper is kept secured during the printing of the first side of the sheet by the secondary feeder rolls (22, 23),

in that the rotation direction of said secondary feeder rolls (22, 23) is reversed.

and in that the sheet (7) of paper is moved on, the front edge, upon need, is adjusted

and the sheet (7) of paper is printed in the same way as the first side thereof was printed.

- 5. An apparatus for executing the method according to any of the preceding claims, comprising
- means (1, 2) for preparing impositions in digital form comprising several print pages (8) each containing text and/or images,

a printing unit (3) for printing of sheets (7) of paper,

a magazine (4) for plane sheets (7) of paper,

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a feeder unit (17) for feeding sheets (7) of paper from said magazine (4) to a printing unit (3) of a type known per se,

characterized in that the feeder unit (17) is formed as a combined feeder and turning unit (5) for sheets (7) of paper comprising guide plates (17a, 17b) for the sheet (7) of paper, stop means (26) arranged adjacent a printing roll (14) of the printing unit (3), secondary feeder rolls (22, 23) in the feeding unit (5) mounted spaced from said stop means (26) and arranged so that they can be rotated in two opposite directions, so that they can be stopped in a locking position for the sheet (7) of paper, and so that they can be opened for releasing of the sheet (7) of paper or parts thereof.

- 6. An apparatus according to claim 5, characterized in that the turning unit (5) for sheets (7) of paper comprises means (14, 26) for providing a stop edge for the sheet (7) of paper and for providing
- a) a driving of secondary drive rolls (22) and counter rolls (23) cooperating therewith,
- b) a stopping of said drive rolls (22) with the counter rolls (23) pressed into contact with the drive rolls (22), and
- c) a releasing of said counter rolls (23) from the secondary drive rolls (22).
- 7. An apparatus according to claim 5 or 6, characterized in that the stop edge for the sheet (7) of paper comprises one or more counter press rolls (26) arranged for being pressed into contact with a printing roll (14) of the printing unit (3) and, at still standing printing roll (14), to form a stop edge for straightening up the sheet (7) of paper.
- 8. An apparatus according to any of claims 5 7, characterized in that the feeder unit is formed with a sensor (24) for indicating the existence of a sheet (7) of paper while feeding in such paper and turning same.